

## ABSTRACT

[0130] A method for defining a full phase layout for defining a layer of material in an integrated circuit is described. The method can be used to define, arrange, and refine phase shifters to substantially define the layer using phase shifting. Through the process, computer readable definitions of an alternating aperture, dark field phase shift mask and of a complimentary mask are generated. Masks can be made from the definitions and then used to fabricate a layer of material in an integrated circuit. The separations between phase shifters, or cuts, are designed for easy mask manufacturability while also maximizing the amount of each feature defined by the phase shifting mask. Cost functions are used to describe the relative quality of phase assignments and to select higher quality phase assignments and reduce phase conflicts.